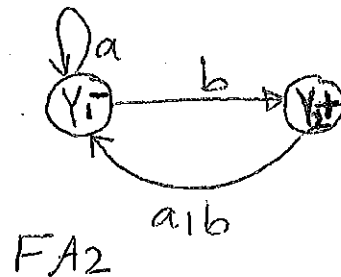
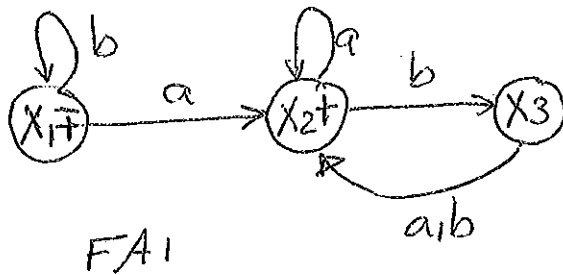


Answer the following questions

a) Given below two DFAs FA1 and FA2 for two regular expressions r_1 and r_2 respectively, draw FA for $r=r_1r_2$ (note: $\Sigma = \{a, b\}$)



$$Z_1 = X_1 \text{ or } Y_1$$

in Z_1 if a X_2 or $Y_1 = Z_2$

if b X_1 or Y_1 or $Y_2 = Z_3$

in Z_2 if a X_2 or $Y_1 = Z_2$

if b X_3 or $Y_2 = Z_4$

in Z_3 if a X_2 or $Y_1 = Z_2$

if b X_1 or Y_1 or $Y_2 = Z_3$

in Z_4 if a X_2 or $Y_1 = Z_2$

if b X_2 or $Y_1 = Z_2$

